

What is claimed is:

1. A device for imaging a printing form comprising:
 - a plurality of light sources;
 - imaging optics for producing a plurality of image spots of the light sources on the printing form, the imaging optics including at least one macro-optical system having refractive optical components,
 - wherein an optical path from the light sources to the image spots passes through the macro-optical system twice.
2. The device for imaging as recited in claim 1 wherein the macro-optical system has an optical axis and the optical path is off-axis.
3. The device for imaging as recited in claim 1 wherein the macro-optical system has an optical axis and the optical path runs symmetrically to the optical axis.
4. The device for imaging as recited in claim 1 wherein macro-optic system has a first principal plane and a second principal plane located on one side of the macro-optical system.
5. The device for imaging as recited in claim 1 further comprising at least one mirror associated with the macro-optical system.
6. The device for imaging as recited in claim 5 wherein the macro-optical system includes at least adaptive optic part or the at least one mirror is adaptive.
7. The device for imaging as recited in claim 1 wherein the macro-optical system includes at least one movable lens.
8. The device for imaging as recited in claim 1 wherein the light sources are individually addressable lasers.
9. The device for imaging as recited in claim 8 wherein the individually addressable lasers are diode lasers or solid lasers.

10. The device for imaging as recited in claim 8 wherein the individually addressable lasers are integrated on a bar.
11. The device for imaging as recited in claim 1 wherein the imaging optics includes a micro-optical system arranged downstream of the plurality of light sources and arranged upstream of the macro-optical system.
12. The device for imaging as recited in claim 8 wherein the imaging optics includes a micro-optical system arranged downstream of the individually addressable lasers allowing beam diameters of the light beams emerging from the lasers to be influenced independently of each other in two orthogonal axes.
13. The device for imaging as recited in claim 11 wherein the micro-optical system produces a virtual intermediate image projected by the macro-optical system.
14. The device for imaging as recited in claim 1 further comprising at least one light-deflecting element, light of the plurality of light sources being coupled into the macro-optical system via the at least one light-deflecting element.
15. The device for imaging as recited in claim 14 wherein the light-deflecting element is a Porro prism.
16. The device for imaging as recited in claim 1 wherein the macro-optical system is telecentric on both sides.
17. The device for imaging as recited in claim 1 wherein the macro-optical system provides 1:1 imaging.
18. The device for imaging as recited in claims 1 further comprising correction optics for adjusting an image size arranged downstream of the macro-optical system.
19. The device for imaging as recited in claim 18 wherein the correction optics includes a zoom lens system with two lenses.

20. The device for imaging as recited in claim 1 wherein neighboring image spots of the plurality of image spots of the light sources on the printing form have an equal distance a , equal distance a being a whole-number multiple of a minimum printing dot spacing p .
21. The device for imaging as recited in claim 20 wherein the number of the plurality of light sources is n , n being relatively prime to the number (a/p) .
22. A printing unit comprising at least one device for imaging as recited in claim 1.
23. A printing press comprising at least one printing unit as recited in claim 22.
24. A method for changing a relative position of an image spot with respect to a position of a printing form in a device for imaging a printing form, the device for imaging including a plurality of light sources and imaging optics for producing a plurality of image spots of the light sources on the printing form, the imaging optics including at least one macro-optical system, the method including:
 - moving a lens in the macro-optical system, the macro-optical system being traversed twice by an optical path from the light sources to the image spots.
25. The method as recited in claim 24 further comprising imaging the printing form.